Databases and catalogues

L. Bourgès, G. Mella

ESO & JMMC (VLTI) meeting

2021-07-07

Summary

- Databases:
  - OiDB
  - ObsPortal
  - Olbin publications (not presented)
- Catalogues
  - JSDC (already presented)
  - JMDC
  - BadCal

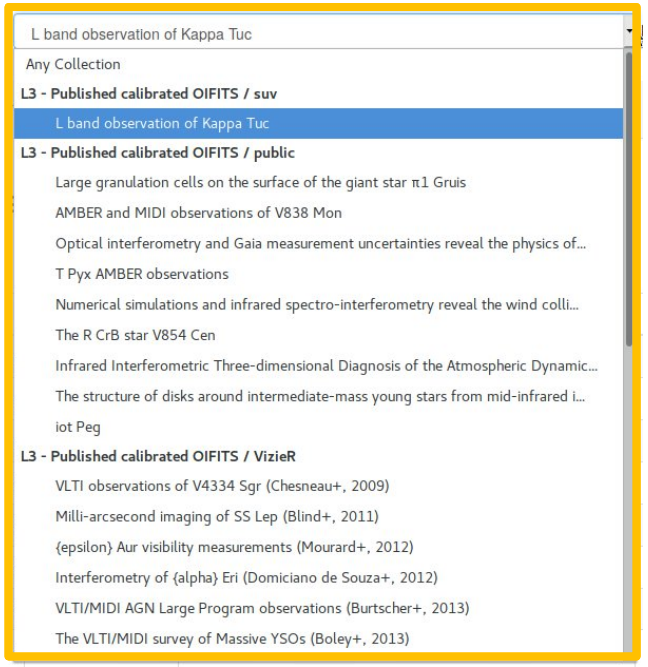
ODB

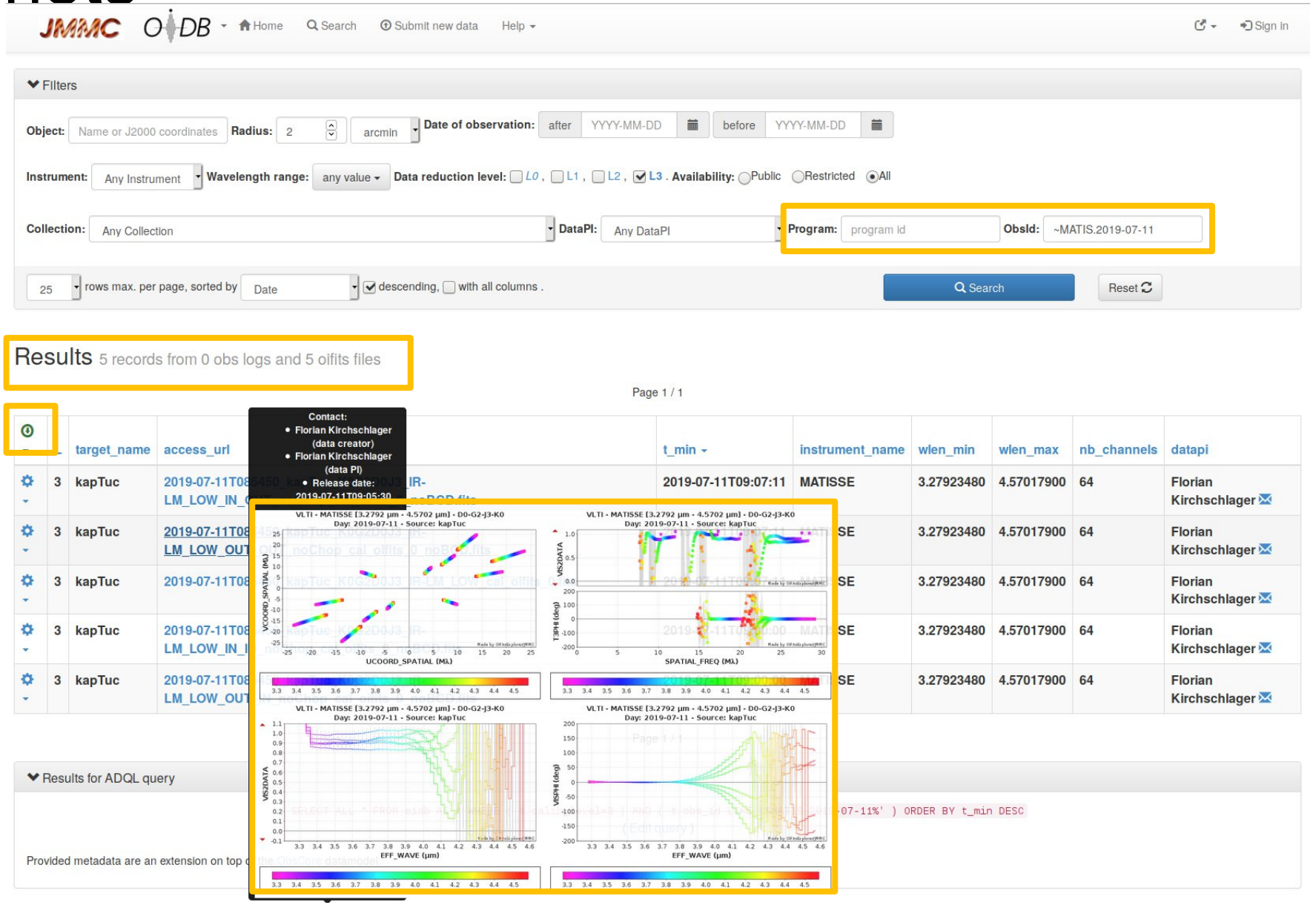
OiDB

- central access to optical interferometry data
- web & programmatic interface (Obscore/TAP)
- harvesting + user uploads
- worldwide interferometers

https://oidb.jmmc.fr

OiDB screenshots





JMMC OiDB Home Search Submit new data Dashboard Help Logged In.

Add calibrated OIFITS files

Step 1 : Upload OIFITS files

Target	Instrument	Instrument mode	Time interval	Quality

+ Add files

Step 2 : Choose collection

Create a collection

Append to ...

HD 163296 - Jozsef Varga

Step 3 : Save

JMMC OiDB Home Search Submit new data Dashboard Help Logged In.

Add calibrated OIFITS files

Step 1 : Upload OIFITS files

Target	Instrument	Instrument mode	Time interval	Quality

+ Add files

Step 2 : Choose collection

Collection details

Collection type: public / simulation / SUV

Name: collection name

Title: collection title

Description: ...

Keywords:

Data PI: Guillaume Mella

Step 3 : Save

Save

Cancel

Contact

Data PI / OBS creator

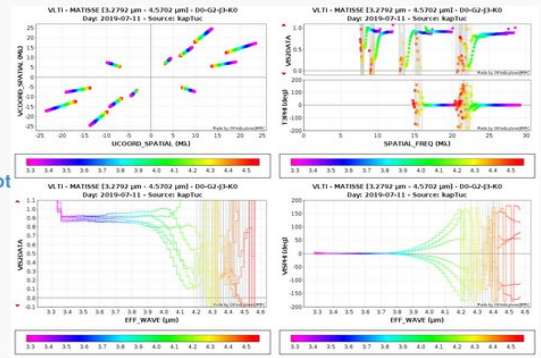
Florian Kirchschlager

Comments

+ Add the first comment

Quicklook plots

Quick plot



Contact

Data PI

Not present in metadata

OBS creator

jmmc-tech-group - Bour

Ancillary data

calib_level	id	obs_collection	datapi
0	1293809	ESO VLTI Import	

Commer

+ Add the first comme

External resources

Details progid *0103.C-0725(A)* on ESO archive

Details progid *0103.C-0725(A)* on JMMC ObsPortal

Check or display content in OIFitsValidator

Ancillary

calib_level			
3	1355457	Kappa Tuc	Florian Kirchschlager
3	1355464	Kappa Tuc	Florian Kirchschlager

External resources

Details progid *0103.C-0725(A)* on ESO archive

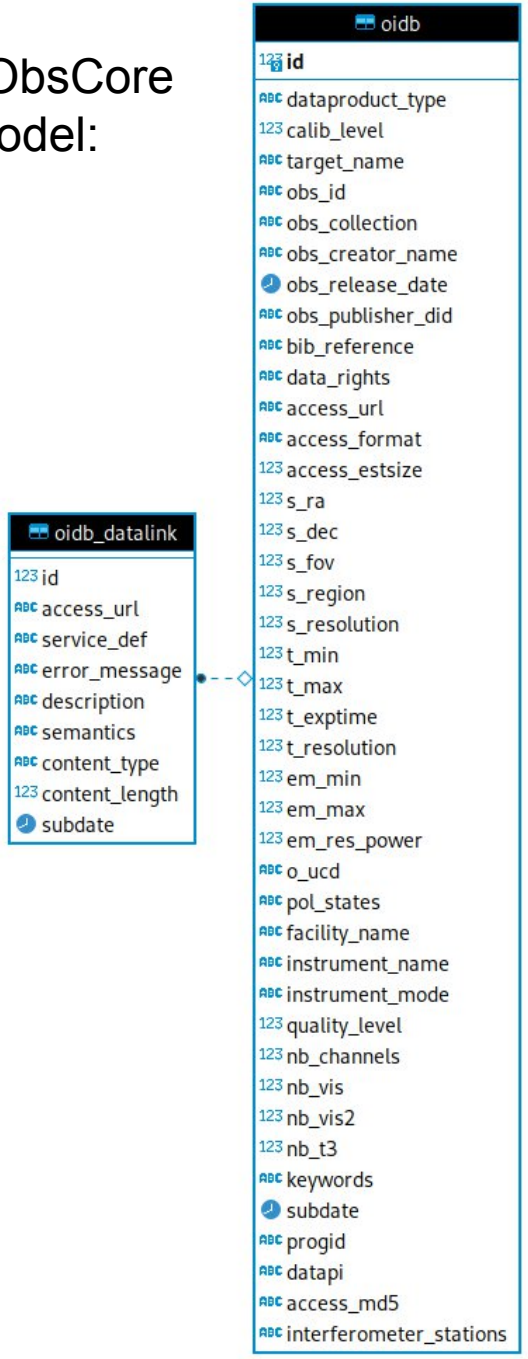
Details progid *0103.C-0725(A)* on JMMC ObsPortal

Details exposure *MATIS.2019-07-11T09:03:31.168_1* on JMMC ObsPortal

OiDB technical aspects

- Based on an hybrid database backend
  - XML + postgres RDBMS +TAP extension
  - datamodel extends IVOA/ObsCore
- Web & API submissions for OIFits V1& V2
- OIFits hosting & remote location support (CDS published)
- Handles authorization access for private data&datalinks
  - using permissions/ACLs on OiDB database storage
  - generating htaccess per collection on remote hosted locations
    - E.G. PIONIER L2 collection is hosted on a jmmc apache webserver. Embargoed data and associated quality plots are covered by the daily generated htaccess
- Validation process during OIFits local upload. Published data (L3) granted even if errors

IVOA/ObsCore DataModel:



OiDB TODO

- Enable dataPI to share private data to other cols, groups...
- Gather OiDB records in a new common JMMC TAP service
  - would facilitate JMMC's catalogs crossmatch / advanced queries
- Enhance search interface (facets) and update process (fix some descriptive parts, link data...)
- Provide DOIs ? per granule, per collection ?
- Register OiDB in the VO-registry

ObsPortal

Get past observations into ASPRO2

Obs logs

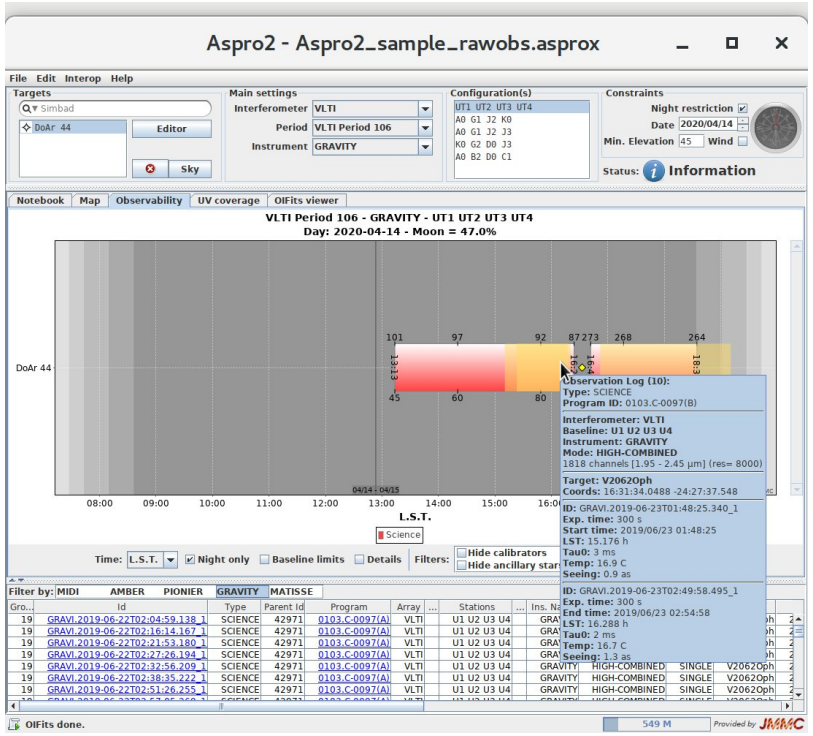
ASPRO2 performs ObsPortal cone-search queries for each target (VOTable).

Why not query ESO archive directly ?
To parse FITS header keywords => target, instrument mode, UV points (get header is very slow)

Problem: target identification is fuzzy (varying RA / DEC in FITS headers for the same target, like alf cma)

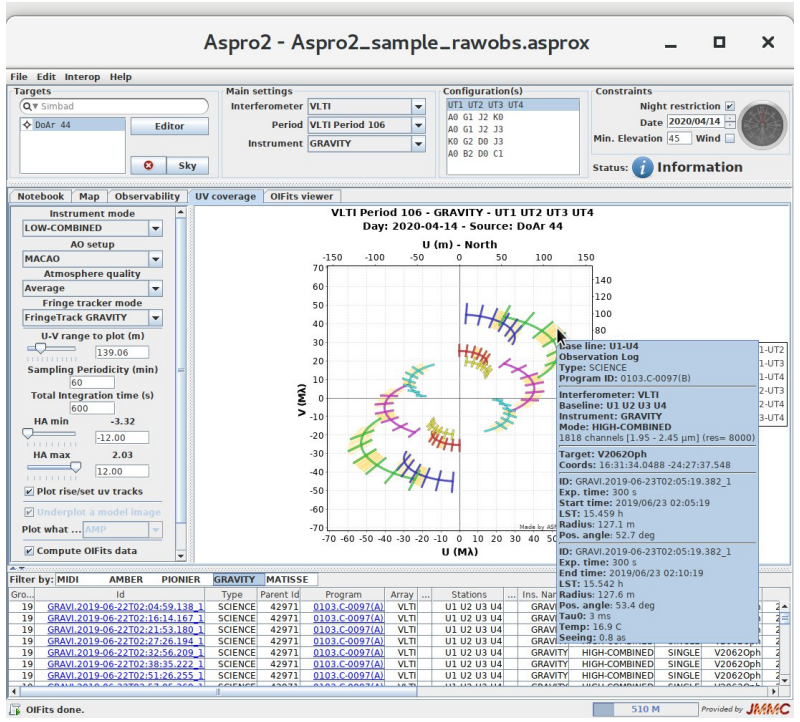
Get latest obs logs from obs portal

- Show table + details in tooltips
- Filter obs logs by instrument (more filters to come)



Show UV tracks of (filtered) obs logs

Note: each ESO OB gives projected baseline (radius + pa) + mjd times



JMMC Obs Portal

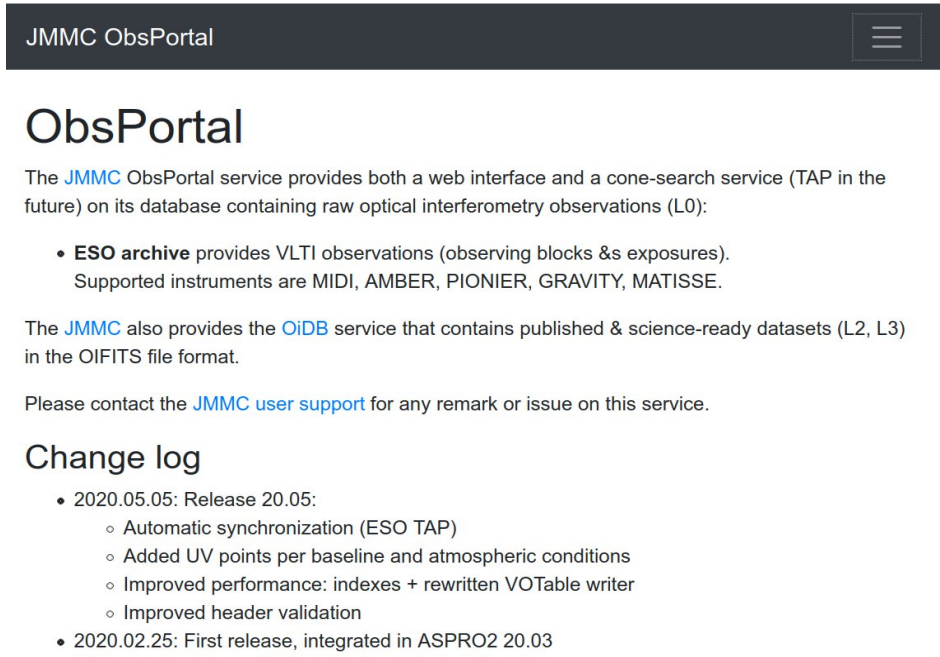
http://obs.jmmc.fr/

(Python / postgresql web app)

Blue / Green (k8s + docker) deployments !

https://gricad-gitlab.univ-grenoble-alpes.fr/OSUG/JMMC/jmmc-obsportal

https://gricad-gitlab.univ-grenoble-alpes.fr/OSUG/JMMC/jmmc-obsportal-kubernetes



- Observation Logs from VLTI
  - all instruments
  - ESO sync every hour (TAP + get header)
- OiDB sync => L0 ESO

- Future:
  - Ingest CHARA / SPICA observation logs
  - provide TAP interface
  - Better target identification by position ?

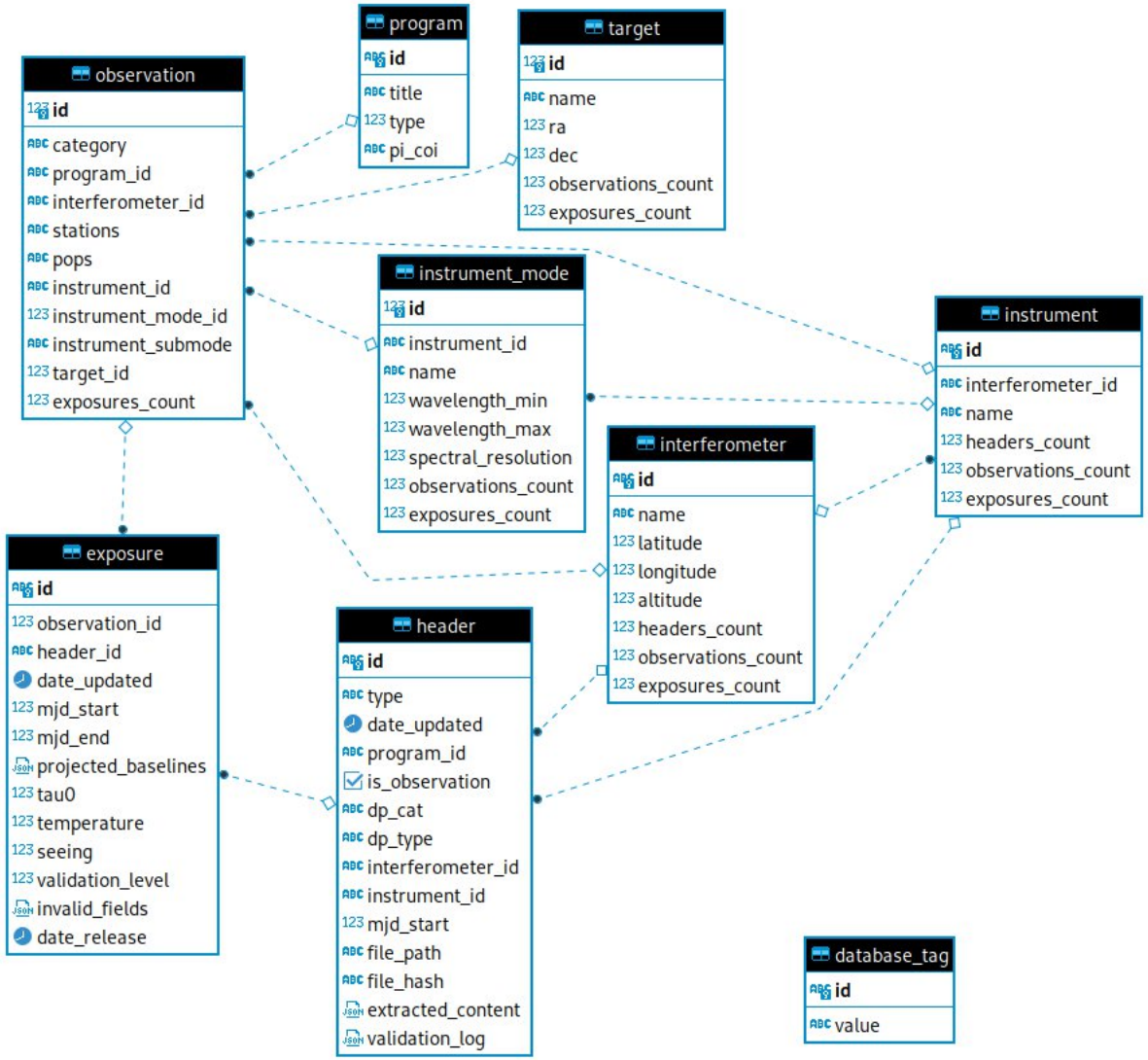
Database statistics

Header count	1035757
Target count	35277
Observation count	47263
Exposure count	342284
Valid exposure count	336192 (98.22%)
Exposure Date min	2003-06-14 07:13:36.000
Exposure Date max	2021-03-23 08:57:49.326
Header last ModificationDate	**2021-03-23 09:01:38 UTC+0000**

ObsPortal data model

- Observation (exposure)
- Target (position only)
- Array / Instrument / observing mode
- MJD / obs timestamps
- Weather conditions

- Missing: ESO OB grading / other quality flags



JMDC / BadCal

JMDC

Catalog of measured stellar diameters by interferometry or lunar occultation observing techniques

- Allows method calibration (fit) to estimate stellar diameters from photometry (SearchCal / JSDC)
- New web interface to submit new diameter measurements with validation : http://jmdc.jmmc.fr/
- Publication JMDC v4 @ CDS : Vizier II/345
  - 28-Nov-2016: First version with 1239 measurements
  - 29-Mar-2018: New version with 1478 measurements
  - 16-Jan-2019: New version with 1554 measurements
  - 07-Feb-2020: New version with 1672 measurements
- Caution: some target entries (e.g. close binaries) are unresolved by SIMBAD (bad identifiers)

ID1	ID2	UD_DIAM	LD_DIAM	E_LD_DIAM	BAND	MU_LAMBDA	METHOD	BANDCODE	NOTES	BIBCODE
2MASS J17454004-2900225	GC IRS 7	1.076	1.116	0.093	K		1	8	ld coeff from 2000A&A...363.1081C	2014A&A...568A..85P
2MASS J18150712-0018523	FG Ser	0.83	-1.0	0.03	H		1	7	SB1 binary, secondary not resolved, fills roche lobe = non-spherical	2014A&A...564A...1B
2MASS J18150712-0018523	FG Ser	0.94	-1.0	0.05	H		1	7	SB1 binary, secondary not resolved, fills roche lobe = non-spherical	2014A&A...564A...1B
2MASS J20424649+0841135	ER Del	0.61	-1.0	0.04	H		1	7	SB1 binary, secondary not resolved	2014A&A...564A...1B

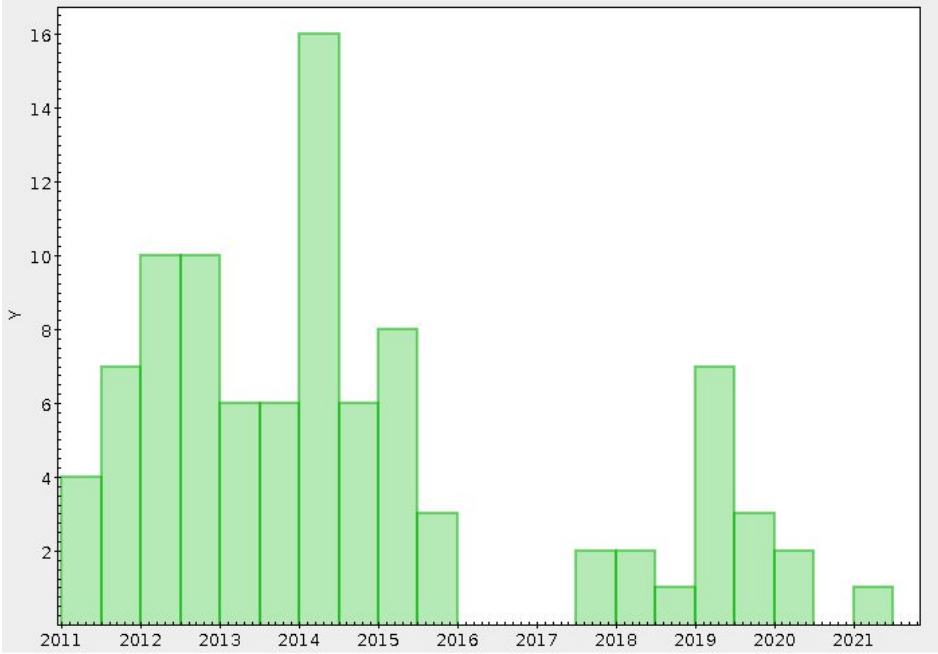
BadCal

http://www.jmmc.fr/badcal/

- Exposes 140 bad calibrators on 2021
- Online since 2010
  - 50 first extracted from the IAU Bad Calibrator Registry
- Low registration rate :(
  - Relies on individuals comments

  => Could it be facility driven ?

  => Are all ESO's badcal registered ?



Current datamodel:

- coords,name, obs_date
- interferometer, insname, baseline, wavelength,
- user_name, user_affiliation, user_comment
- sub_date

Questions ?